

Deer Tail Scientific

Duluth, Minnesota

deertailscientific.wordpress.com

Date: July 31, 2019	
To:	
Minnesota Governor Tim Walz & Lt. Governor Flanagan 130 State Capitol 75 Rev Dr. Martin Luther King Jr. Blvd. St. Paul, MN 55155	Nancy Schuldt, Water Projects Coordinator Fond du Lac Band of Lake Superior Ojibwe 1720 Big Lake Road Cloquet, MN 55720
Minnesota Attorney General Keith Ellison 445 Minnesota Street, Suite 1400 St. Paul, MN 55101-2131	Margaret Watkins, Water Quality Specialist Grand Portage Band of Lake Superior Ojibwe PO Box 428 Grand Portage, MN 55605
Laura Bishop, Commissioner Minnesota Pollution Control Agency 520 Lafayette Road N St. Paul, MN 55155-4194	Bill Latady, Curator Bois Forte Heritage Museum 1500 Bois Forte Road Tower, MN 55790
Sarah Strommen, Commissioner Minnesota Department of Natural Resources P.O. Box 37 St Paul, MN 55155-4037	Michael Jimenez U.S. Forest Service – Superior National Forest 8901 Grand Ave Place Duluth, MN, 55808
Jeff Udd, Metallic Mining Director Minnesota Pollution Control Agency 525 Lake Ave. S., Suite 400 Duluth, MN 55802-2300	Tamara Cameron, Deputy Chief, Operations Division U.S. Army Corps of Engineers – St. Paul District 180 5 th Street East, Suite 700 St. Paul, MN 55101
Bill Johnson, Environmental Review Mining Lead Minnesota Department of Natural Resources P.O. Box 25 St Paul, MN 55155-4025	Andrew Horton U.S. Fish and Wildlife Service Ecological Services Field Office 4101 American Blvd. East Bloomington, MN 55425
Lisa Fay, Environmental Review Planner Minnesota Department of Natural Resources P.O. Box 25 St Paul, MN 55155-4025	Jonathan Moody USEPA – Region 5 77 W. Jackson Blvd. – E-19J Chicago, IL 60604-3507
Ginny Yingling, Hydrogeologist Minnesota Department of Health Environmental Health Division P.O. Box 64975 St. Paul, MN 55164-0975	Krista McKim USEPA – Region 5 77 W. Jackson Blvd. – SR-6J Chicago, IL 60604-3507
U.S. Congresswoman Betty McCollum 661 LaSalle Street, Suite 110 St. Paul, MN 55114	Daniel J. Cozza, USEPA – Region 5 77 W. Jackson Blvd. – WS-15J Chicago, IL 60604-3507

From: Laura Gauger, Chair, Deer Tail Scientific, 231 E. Superior St. #1409, Duluth, MN 55802

RE: Recently-released expert report exposing inadequate monitoring and mitigation practices at Wisconsin's Flambeau Mine – a project largely designed by Foth (Green Bay, WI), the same engineering firm hired by PolyMet to “assist in completion of the NorthMet environmental review and permitting process” and help “bring the PolyMet permits across the finish line”¹.

¹ PolyMet press release, September 11, 2012.

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Hello!

My name is Laura Gauger, and I am the chair of a small Minnesota nonprofit, Deer Tail Scientific¹. I am writing to see if I might be able to make an appointment to meet with one or more of you regarding a recently-released expert report that exposes inadequate monitoring and mitigation practices at Wisconsin's Flambeau Mine – a project largely designed by Foth (Green Bay, WI), the same engineering firm hired by PolyMet to “assist in completion of the NorthMet environmental review and permitting process” and help “bring the PolyMet permits across the finish line”².

I believe the report is worthy of your attention for several reasons:

- It contradicts information provided to the state's former governor and others in power regarding Foth's track record at Flambeau – information which may have unduly influenced the decision-making process for the PolyMet project;
- It brings into question past monitoring and mitigation practices espoused by one of the architects of the PolyMet project (Foth) – practices that, according to the report, resulted in significant water-related impacts not only *occurring* at Flambeau, but being *withheld from public view*; and
- It raises awareness of important details to scrutinize in the recently-awarded permits to PolyMet so that the same questionable practices associated with the Foth-designed Flambeau project are not repeated at NorthMet.

As noted above, Foth was the main engineering consultant for the Flambeau Mine, an open-pit copper/gold/silver mine that operated near Ladysmith, Wisconsin in the mid-1990s. Interestingly, when then-Governor Mark Dayton and Minnesota lawmakers were grappling with the PolyMet proposal several years ago, a letter was sent to them by a prominent mining trade organization, Mining-Minnesota, citing the Flambeau Mine as an example of a copper/nickel mine that had operated “without polluting local waters”. This, of course, was done in an effort to convince the Governor and others in power that, as stated in the letter, “Minnesota should enthusiastically support the development of its own resources by way of mining” (see Exhibit A-1). Similar information has also been circulated by Twin Metals Minnesota in efforts to gain support for their copper/nickel mine planned near the Boundary Waters Canoe Area Wilderness (see Exhibit A-2).

A report authored by hydrogeologist Robert E. Moran (remwater.org; see Exhibit B for credentials) was recently released that documents serious water contamination issues at the Flambeau Mine (including ground water pollution and impairment of a stream), demonstrating that the information about the Flambeau Mine provided to Governor Dayton and others in power was misleading and untrue. Dr. Moran, who undertook a review of historical and modern Flambeau Mine documents at my request and the request of others (including the Wisconsin Sierra Club and Wisconsin Resources Protection Council), concluded the following: “Flambeau ground and surface water quality is being and has been degraded—despite years of industry public relations statements touting the success of the Flambeau Mining Company (FMC) operation.” He added: “For decades, some of the most relevant data and the most significant water-related impacts have been withheld from public view.”

¹ Deer Tail Scientific (deertailscientific.wordpress.com) is a 501(c)3 nonprofit organization founded in 2017. As stated in its bylaws: *The mission of Deer Tail Scientific is to educate the public, government officials and tribal sovereign nations with fact-based information on: (1) the permitting, development, reclamation, environmental performance and economics of Wisconsin's Flambeau Mine; and (2) how the Flambeau Mine compares to other mines (closed, currently operating or proposed) in the Great Lakes region and beyond.*

² PolyMet news release, September 12, 2012.

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During the review process, Dr. Moran identified significant inadequacies in the environmental monitoring and mitigation programs designed by Foth for the Flambeau project. He also commented on the inaccuracy of some of Foth's predictions regarding the extent of groundwater pollution expected at the Flambeau site and stated:

"The narrative 'predictions' made by FMC's main Wisconsin consultant in the various permit-related and Annual Reports appear to be **largely naïve** geochemically and hydrogeologically ... most useful for obtaining permits, less so for generating quantitatively-reliable predictions."

Dr. Moran concluded his report by stating: "In short, the Flambeau Mine is the poster child for a severely-flawed permitting and oversight process that has likely generated long-term public liabilities."

A brief summary of Dr. Moran's findings is attached (see Exhibit C). The full report can be accessed on the Deer Tail Scientific website:

Flambeau Mine: Water Contamination and Selective "Alternative Facts," Robert E. Moran, Ph.D., May 2019 (posthumous); 116 pg. (<https://deertailscientific.wordpress.com/moran-report/>)

If you're anything like me, however, it's helpful to have a *printed* copy of a report in your hands, (especially when there are lots of figures, tables and graphs), and there's nothing like a face-to-face meeting to facilitate good communication and address potential questions. For that reason, I'd be happy to bring you a copy of the report and sit down to discuss the main points. I served as Dr. Moran's research assistant for the project, so am in a unique position to answer at least some of the questions you might have. If such a meeting would be of interest to you, please let me know.

Thank you,



Laura Gauger, Chair
Deer Tail Scientific
Duluth, MN 55802

Attachments: Exhibits A, B and C

P.S. This correspondence is being sent to you both electronically (if email address is available) and in print (USPS).

Exhibit A-1

Information Source:

<http://www.miningminnesota.com/reports/letter-to-governor-mark-dayton/>

July 31, 2019

Governor Walz et al.,

Please see page 2 of this letter for information provided to then-Governor Dayton and Minnesota lawmakers regarding the Flambeau Mine (I drew a box around the relevant sections). In addition to making the false claim that the Flambeau Mine had operated "without polluting local waters," the letter mischaracterized the outcome of a federal Clean Water Act lawsuit to which I was a party.

Also, please see the so-called "Fact Sheet" specific to the Flambeau Mine that accompanied the letter to Governor Dayton. It once again made the false claim that the Flambeau Mine had operated without polluting or impairing local waters.

Thank you,
Laura Gauger



Sept. 25, 2013

The Honorable Mark Dayton
Governor, State of Minnesota
130 State Capitol
St. Paul, MN 55155

RE: Minnesota Should Say Yes to Copper-Nickel Mineral Development

Dear Governor Dayton:

Anti-mining activists opposed to mineral development in Minnesota are urging you, as the state's chief executive, to address four questions before the state approves any proposed copper-nickel mining projects. These questions are focused on ensuring Minnesota's water resources are protected, that environmental safeguards are in place, that proper reclamation of mine sites will occur after mining is completed, and that taxpayers will be protected from any financial burdens. We agree that these are all good questions — and that there are fact-based answers that will give you and all the citizens of Minnesota the utmost confidence that new copper-nickel mining projects can bring unprecedented economic opportunity to Minnesota while protecting our precious natural environment. In short, can Minnesota enjoy both mining growth and a healthy environment? The answer is unequivocally **YES**.

1) Will Minnesota's water stay safe and clean?

YES, our water will be protected and be kept safe. The Minnesota Pollution Control Agency (MPCA) and the Federal Environmental Protection Agency have multiple specific water quality standards and regulations. Companies are required to have controls in place to comply with comprehensive environmental standards — assuring clean and safe water, air and land.

2) Are there strong safeguards in place for when things go wrong?

YES, safeguards require companies to demonstrate necessary remediation funding. Further, plans are in place to first prevent pollution and, second, address any potential unforeseen issues. The Minnesota Department of Natural Resources (DNR) and the U.S. Army Corps of Engineers, U.S. Forest Service, and Bureau of Land Management all require thorough environmental review of potential impacts before permits are issued. Should unplanned issues arise during operation, the Minnesota DNR and MPCA have authority to require corrective enforcement actions to remedy the issues. This requires additional financial assurance.

3) Will the company leave the site clean and maintenance free?

YES, state and federal agencies mandate the reclamation of all mining and processing activity, including mines, tailing basins, waste rock, wetland restoration, re-vegetation of disturbed ground, closure and post closure maintenance. In addition, strong financial requirements in Minnesota assure responsible clean-up. The financial assurance must be available to the state at all times and is adjusted annually by the state. Provisions for post closure maintenance are in place as a tool to eliminate the potential for water quality problems that have been documented from past mining operations in other states.

4) Will Minnesota's taxpayers be protected?

YES, taxpayers are financially protected and will not be on the hook for paying for anything that is the financial responsibility of mining companies. Minnesota requires state-managed and annually adjusted bankruptcy-proof financial assurance to cover any possible costs before permits can be issued. Minnesota is authorized to deny or revoke a permit if a company does not comply.

Importantly, Minnesotans will benefit from significant job and economic gains from the state producing its natural resources. Payroll and sales taxes for Minnesota, net proceed taxes for local governments, and royalties to the School Trust Fund provide revenue to every school district in Minnesota.

In addition to the four questions, the anti-mining activists continue to claim that no copper-nickel mine has operated without “polluting” local waters. This simply is not true.

Copper, nickel and other much needed metal production can and has been done safely and successfully, without polluting local waters. Right next door in Wisconsin, the Flambeau Mine is an excellent example of a copper mine that operated for several years, and now has been closed and reclaimed for more than ten years in full compliance with Wisconsin laws.

During both the operation and the closure of the Flambeau Mine, not a single permit condition was violated and the mine has not impaired local waters. The Wisconsin DNR holds this mine up as an example of a successful operation and successful closure.

A recent federal Court of Appeals decision, along with the lower court’s praise for the company’s demonstrated respect of the environment and local community, further affirm that the right company doing the right things in compliance with the right standards can produce the materials society needs safely and responsibly.

Minnesota should enthusiastically support the development of its own resources by way of mining. We can have a win, win, win situation. Mine the metals here in Minnesota – do it with Minnesota jobs – and be an example to the rest of the world for environmentally responsible mining.

Minnesota’s environmental review and permitting process — developed with the input of many stakeholders, including environmentalists — is comprehensive, open and transparent and invites citizen participation at many steps along the way. As an industry, we encourage everyone to participate in the process and learn the facts of each project as it goes through this rigorous review.

Each and every project will be required to demonstrate it will meet or exceed Minnesota’s strict air and water quality standards in order to receive a permit to mine. If a company demonstrates it will meet these strict standards, Minnesota should say **YES** to copper-nickel mining opportunities, and the jobs they bring.

The answer to all the above questions is a resounding, **YES**.

- We will protect our water and keep it safe
- Minnesota has strong safeguards in place
- Companies are required to leave sites clean
- Taxpayers are protected
- It has been done before

Thank you for your continued support of mineral development.

Sincerely,



Frank Ongaro
Executive Director

Cc: Minnesota Legislators, Minnesota Congressional Delegation, Minnesota Mining Subcabinet



MINING MINNESOTA™
RESPONSIBLE DEVELOPMENT
of NATURAL RESOURCES

HAS ANY COPPER-NICKEL MINE OPERATED WITHOUT “POLLUTING” LOCAL WATERS?

YES, copper, nickel and other much needed metal production can and has been done safely and successfully, without polluting local waters.

A great example of this success is next door in Wisconsin. Located near the city of Ladysmith, Wis., the Flambeau Mine operated in the 1990s and has since been closed and reclaimed in full compliance with Wisconsin laws.



FLAMBEAU MINE AT A GLANCE

- The open pit mine produced 181,000 tons of copper, 334 ounces of gold and 3.3 million ounces of silver during operations.
- The Flambeau Mine paid more than \$27.7 million dollars in taxes and fees to local and state governments. This amount is in addition to employee salaries and local expenditures for goods and services.
- More than 100,000 people have visited the reclaimed site to hike the nature trails along the Flambeau River and view local wildlife since the site's reclamation.

PROTECTING THE ENVIRONMENT FROM DAY 1

Wisconsin's mining laws, as well as Minnesota's, are among the strictest in the country and cover every aspect of mining, from exploration to reclamation. Flambeau Mine met these requirements throughout its lifetime.

In fact, not a single permit condition was violated and the mine has not impaired local waters. The Wisconsin DNR holds this mine up as an example of a successful operation and successful closure.

Plans for reclamation were part of the initial permitting process and were approved by state regulators and communities. The reclaimed site is home to:

- More than 10 acres of wetlands.
- Hundreds of species of plants and animals.
- Four miles of hiking trails and five miles of equestrian trails open to the public year round.
- The Flambeau River, which attracts tourists, paddlers and fisherman; protected at every phase of the project, long-term monitoring upstream and downstream proves the river is clean and healthy.
- Clean and healthy groundwater of the same quality as before mining took place.

A recent federal Court of Appeals decision, along with the lower court's praise for the company's demonstrated respect of the environment and local community, demonstrate that the right company doing the right things in compliance with the right standards can produce the materials society needs safely and responsibly.

ADDITIONAL INFORMATION

www.flambeaumine.com

Exhibit A-2

Information Source:

<http://www.twin-metals.com/flambeau-mine-demonstrates-successful-operation-and-reclamation/>

MINE READER



FLAMBEAU MINE DEMONSTRATES SUCCESSFUL OPERATION AND RECLAMATION

Mining Minnesota, a mining trade association, recently released a series of fact sheets which answer four questions an activist group posed to Governor Dayton regarding copper-nickel mining in the state. Each fact sheet provides details about how one of the world's largest undeveloped resources of copper and nickel can be responsibly mined, protecting Minnesota's environment and creating unprecedented economic opportunity.

This week, Mine Reader highlights Mining Minnesota's fact sheet explaining how copper-nickel metal mining has been done safely and successfully at the Flambeau Mine in Ladysmith, Wis.

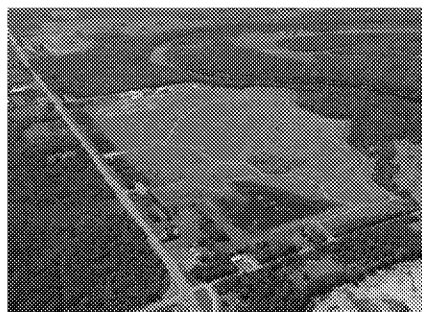
"Wisconsin's mining laws, as well as Minnesota's, are among the strictest in the country and cover every aspect of mining, from exploration to reclamation. Flambeau Mine met these requirements throughout its lifetime.

In fact, not a single permit condition was violated and the mine has not impaired local waters. The Wisconsin Department of Natural Resources points to the Flambeau Mine as an example of successful operation and closure of a copper-nickel mine.

Plans for reclamation were part of the initial permitting process and were approved by state regulators and communities. The reclaimed site is home to:

- More than 10 acres of wetlands.
- Hundreds of species of plants and animals.
- The Flambeau River, which attracts tourists, paddlers and fisherman; protected at every phase of the project.
- Clean and healthy groundwater of the same quality as before mining took place."

The reclaimed Flambeau Mine demonstrates that copper-nickel mining can be done in an environmentally responsible and safe way while producing materials society needs and providing economic opportunity for the region and state. For more information on the successful operation and reclamation of the Flambeau Mine site, visit the Wisconsin DNR at: <http://dnr.wi.gov/topic/mines/flambeau.html>; or visit: <http://www.flambeaumine.com/>.



Flambeau Mine during production and after reclamation.

To learn more, read Mining Minnesota's letter to Governor Dayton in its entirety here: <http://miningminnesota.com/uploads/Governor.pdf>.

Exhibit B



Robert E. Moran, Ph.D.

Michael-Moran Assoc., LLC
Water Quality/Hydrogeology/Geochemistry
Golden, Colorado, U.S.A.
remwater@gmail.com
remwater.org

Dr. Robert Moran has more than 45 years of domestic and international experience in conducting and managing water quality, geochemical and hydrogeologic work for private investors, industrial clients, tribal and citizens groups, NGO's, law firms, and governmental agencies at all levels. Much of his technical expertise involves the quality and geochemistry of natural and contaminated waters and sediments as related to mining, nuclear fuel cycle sites, industrial development, geothermal resources, hazardous wastes, and water supply development. In addition, Dr. Moran has significant experience in the application of remote sensing to natural resource issues, development of resource policy, and litigation support. He has often taught courses to technical and general audiences, and has given expert testimony on numerous occasions. Countries worked in include: Australia, Greece, Bulgaria, Mali, Senegal, Guinea, Gambia, Ghana, South Africa, Iraqi Kurdistan, Oman, Pakistan, Kazakhstan, Kyrgyzstan, Mongolia, Romania, Russia, Papua New Guinea, Argentina, Bolivia, Chile, Colombia, Guatemala, Haiti, Honduras, Mexico, Peru, El Salvador, Belgium, France, Canada, Germany, Great Britain, Netherlands, Spain, United States.

EDUCATION

University of Texas, Austin: Ph.D., Geological Sciences, 1974
San Francisco State College: B.A., Zoology, 1966

PROFESSIONAL HISTORY

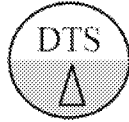
Michael-Moran Assoc., LLC, Partner, 2003 to present
Moran and Associates, President, 1983 to 1992; 1996 to 2003
Woodward-Clyde Consultants, Senior Consulting Geochemist, 1992 to 1996
Gibbs and Hill, Inc., Senior Hydrogeologist, 1981 to 1983
Envirollogic Systems, Inc., Senior Hydrogeologist/Geochemist, 1980 to 1981
Tetra Tech Int'l. / Sultanate of Oman, Senior Hydrogeologist, 1979 to 1980
Science Applications, Inc., Geochemist/Hydrologist, 1978 to 1979
U.S. Geological Survey, Water Resources Division, Hydrologist/Geochemist, 1972 to 1978
Texas Bureau of Economic Geology, Research Scientist Assistant, 1970 to 1971

LANGUAGES

English, Spanish

CITIZENSHIP: United States of America, Ireland

Exhibit C



Deer Tail Scientific

Duluth, Minnesota
deertailscientific.wordpress.com

July 2019

New Report Reveals Inadequate Monitoring and Mitigation Practices at Flambeau Mine **– Raises Awareness of Important Details to Scrutinize in New Mining Proposals**

A new report reviewing mining industry practices at the now-closed Flambeau Mine near Ladysmith, Wisconsin exposes how crucial environmental monitoring data have been withheld from the public. The Flambeau Mine, considered state of the art by today's standards, has been promoted by supporters of the PolyMet and Twin Metals projects in Minnesota as an example of a mine that operated "without polluting local waters." Similar claims have been made by proponents of the Back Forty project on the Michigan/Wisconsin border, the Eagle and Copperwood projects in Michigan and the Pebble project in Alaska.

The primary author of the report, the late Dr. Robert E. Moran (Golden, CO; remwater.org)ⁱ, reviewed thousands of pages of historical and modern Flambeau Mine documents and concluded the following:

"For decades, some of the most relevant data and the most significant water-related impacts have been withheld from public view."

In particular, Dr. Moran noted the following in his 116-page report: ***Flambeau Mine: Water Contamination and Selective "Alternative Facts"***:

- All routine Flambeau ground water monitoring data are from filtered samples, from which some, if not most of the chemical components have been removed, thereby lowering the original concentrations.
- The number and location of monitoring wells along the mine's so-called "compliance boundary" (where ground water standards are enforced by the state) are inadequate. There is only one nested well along the entire 3.5-mile boundary encircling the mine site, and it appears to be positioned outside the main ground water flow path identified by Flambeau Mining Company (FMC).
- The Wisconsin DNR allowed FMC to severely restrict the constituents determined in effluent from the mine's waste water treatment plant after only 12 weeks of sampling, when blasting in the pit had commenced only 2 months earlier. These waters would have had insufficient time to evolve chemically and become suitably representative of waters in contact with sulfide-rich rocks.
- Most of the FMC monitoring wells currently in use have an inner diameter of only 2 inches – too narrow to allow adequate development or sampling in such chemically-unstable waters. Thus, much of the FMC ground water data is not representative of the *in-situ* water quality.
- Limestone amendment of backfilled waste rock in the mine pit has not prevented significant degradation of ground water quality.
- FMC's surface water monitoring program in the Flambeau River has been "totally inadequate," both in terms of the number and location of sampling sites and the number of constituents reported. No samples have been collected for analysis immediately adjacent to the backfilled pit, even though FMC's own modeling showed that groundwater flowing through the waste rock in the reclaimed pit would "flow directly into the bed of the Flambeau River."
- FMC discontinued their program of testing Flambeau River walleye for metals accumulation in 2011, despite earlier data showing an increase in walleye liver copper concentrations subsequent to mining, with downstream concentrations being significantly higher than upstream concentrations.
- FMC has conducted no follow-up testing to determine the fate of endangered species found in the Flambeau River near the mine site prior to operations.
- A Flambeau River tributary that carries stormwater runoff from the mine site to the river has been added to the EPA's impaired waters list for exceedances of acute toxicity criteria for copper and zinc, despite passive water treatment.

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Dr. Moran also commented on the inaccuracy of some of the predictions made by Foth (Green Bay, WI), the main engineering firm utilized by FMC for the Flambeau project, regarding the extent of groundwater pollution expected at the mine site. He stated:

- “The narrative ‘predictions’ made by FMC’s main Wisconsin consultant in the various permit-related and Annual Reports appear to be largely naïve geochemically and hydrogeologically ... most useful for obtaining permits, less so for generating quantitatively-reliable predictions.”

Foth also consults for: PolyMet, Twin Metals, Eagle, Copperwood, and Aquila Resources (owner of the Back Forty project in Michigan and the Bend and Reef projects in Wisconsin).

After his thorough review of FMC documents, Dr. Moran concluded his report with the following comments:

“In short, the Flambeau Mine is the poster child for a severely-flawed permitting and oversight process that has likely generated long-term public liabilities.”

He added: “Flambeau ground and surface water quality is being and has been degraded—despite years of industry public relations statements touting the success of the FMC operation. Rio Tinto said in a 2013 public relations (PR) release regarding the Flambeau Mine: ‘Testing shows conclusively that ground water quality surrounding the site is as good as it was before mining.’ In efforts to encourage development of the other metal-sulfide deposits in northern Wisconsin and the Great Lakes region, the industry approach has been to simply repeat this false statement over and over, assuming that repetition will make it believed. **Unfortunately, the FMC data show otherwise.**”

To read Dr. Moran’s report in its entirety, go to:
<https://deertailscientific.wordpress.com/independent-research/>

For more information, please contact Deer Tail Scientificⁱⁱ
Laura Gauger, Chair, deertailscientific@gmail.com, Tel: 218-724-3004

ⁱ This project was undertaken by hydrogeologist Robert E. Moran (Michael-Moran Associates, Golden, CO) in February 2017. He published a summary of his initial findings in April 2017 (<https://remwater.org/projects/flambeau-mine-ladysmith-wisconsin-u-s/>) and continued work on a more detailed report to be issued later the same year. Upon the premature death of Dr. Moran, the project was completed by Dr. David M. Chambers (Center for Science in Public Participation, Bozeman, MT; csp2.org) and research assistant Laura J. Gauger (Deer Tail Scientific, Duluth, MN), with funding provided by Deer Tail Scientific.

ⁱⁱ Deer Tail Scientific is a 501(c)3 nonprofit organization founded in 2017. As stated in its bylaws: *The mission of Deer Tail Scientific is to educate the public, government officials and tribal sovereign nations with fact-based information on: (1) the permitting, development, reclamation, environmental performance and economics of Wisconsin’s Flambeau Mine; and (2) how the Flambeau Mine compares to other mines (closed, currently operating or proposed) in the Great Lakes region and beyond.*